

# LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

## Volume 5 | Technical Appendices

CFA24 | Birmingham Interchange and Chelmsley Wood  
**Baseline (SV-002-024)**  
Sound, noise and vibration

November 2013

# LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

## Volume 5 | Technical Appendices

CFA24 | Birmingham Interchange and Chelmsley Wood

**Baseline (SV-002-024)**

Sound, noise and vibration

November 2013



Department  
for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

A report prepared for High Speed Two (HS2) Limited.

High Speed Two (HS2) Limited,  
Eland House,  
Bressenden Place,  
London SW1E 5DU

Details of how to obtain further copies are available from HS2 Ltd.

Telephone: 020 7944 4908

General email enquiries: [HS2enquiries@hs2.org.uk](mailto:HS2enquiries@hs2.org.uk)

Website: [www.hs2.org.uk](http://www.hs2.org.uk)

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.



Printed in Great Britain on paper  
containing at least 75% recycled fibre.

# Appendix SV-002-024

Environmental topic:	Sound, noise and vibration	SV
Appendix name:	Baseline	002
Community forum area:	Birmingham Interchange and Chelmsley Wood	024

# Contents

## Table of Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Structure of the sound, noise and vibration appendices	1
1.2	Existing acoustic environment	1
<b>2</b>	<b>Scope, assumptions and limitations</b>	<b>3</b>
2.1	Sound and vibration sensitive receptors	3
2.2	Local engagement	3
2.3	Existing baseline sound monitoring locations	3
<b>3</b>	<b>Environmental baseline</b>	<b>5</b>
3.1	Existing baseline data collection methodology	5
3.2	Existing baseline sound levels	6
3.3	Future baseline methodology	18
<b>4</b>	<b>References</b>	<b>19</b>

## List of tables

Table 1: Existing baseline sound levels	8
Table 2: Data source coding key	17
Table 3: 2026 future baseline changes in sound sources	18

# 1 Introduction

## 1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant policy and methodology (Volume 5: Appendix SV-001-000). This relates to the sound, noise and vibration assessment for all community forum areas.
- 1.1.2 For the Birmingham Interchange and Chelmsley Wood area (CFA24), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-024) (this appendix);
  - construction sound, noise and vibration (Appendix SV-003-024); and
  - operational sound, noise and vibration (Appendix SV-004-024).
- 1.1.3 Maps referred to within this appendix are contained in Volume 5, Map Book Sound, noise and vibration.
- 1.1.4 This appendix includes details of the existing and future baseline sound environment within the area. It provides details of measurements and any other data collection which has been undertaken in order to obtain existing and future baseline sound levels.

## 1.2 Existing acoustic environment

- 1.2.1 The sound climate of the area of Birmingham Interchange and Chelmsley Wood reflects the mix of usage and activity in the area ranging from the large residential community of Chelmsley Wood in the north of the area, the commercial area of Birmingham Business Park and the extensive estate of the National Exhibition Centre (NEC), its associated hotels and car parks.
- 1.2.2 The south and east of the area is more rural with a few small communities and some relatively isolated residences and farms. The significant sound sources which traverse the area are; the M42 running approximately north-south, the M6 to the north, the A45 Coventry Road in the south running east-west and the A452 Chester Road and A446 Stonebridge Road which run roughly north-west to south-east.
- 1.2.3 The Rugby to Birmingham line also crosses the edge of this area. However, since all passenger trains stop at Birmingham International station, train speeds (and therefore sound impact) are somewhat reduced. Birmingham Airport is situated in the area. However the principal communities that are the subject of this report lie parallel to the main runway and are therefore not generally over-flown by the main air traffic. Some receptors in the south of this area are, however, close to the flight path. Away from these major sound sources the sound climate is one of local road traffic, agricultural activities, and in quieter areas the sound of animals and birdsong.
- 1.2.4 To the south of the area, existing baseline sound levels are dominated by road traffic on the A45 Coventry Road, M42 and to some extent the A452 Chester Road. At a greater distance from these roads, existing sound levels are reduced, but these major roads remain the dominant sources. Night time sound levels are generally slightly lower than those during the daytime, although in many locations this reduction is small in magnitude.

- 1.2.5 Through Birmingham Business Park, existing sound levels are generally dominated by sound from the A452 Chester Road, although natural sounds such as birdsong and trees rustling become more notable at greater distances from this road.
- 1.2.6 Within Chelmsley Wood, existing sound levels are dominated by sound from the A452 Chester Road and M6, although at greater distances from these roads, where intervening houses provide significant screening, more local sound sources such as local roads and birdsong become more significant. Close to the major roads, night-time sound levels are only slightly lower than those during the daytime, though at greater distances from the roads, this differences is larger.
- 1.2.7 Across most of the area aircraft approaching and/or departing from Birmingham Airport are often audible. The sound levels from aircraft are dependent on the operating pattern of the airport runways. However sound from aircraft is generally not the dominant source in any of this area.

## 2 Scope, assumptions and limitations

### 2.1 Sound and vibration sensitive receptors

2.1.1 Within the Birmingham Interchange and Chelmsley Wood area, 111 assessment locations have been defined to represent all identified sound and vibration sensitive receptors within the spatial scope. The assessment locations are shown on the detailed maps in map series SV-03 and SV-04 (Volume 5, Map Book Sound, noise and vibration). Within this area, the following types of sound and vibration sensitive receptors have been identified:

- residential areas;
- education facilities;
- community centres and meeting facilities;
- places of worship; and
- healthcare facilities.

### 2.2 Local engagement

2.2.1 Discussions have been held with representatives of Solihull Metropolitan Borough Council (SMBC) regarding the approach which has been taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors, the selection of assessment location and baseline sound levels at these assessment locations.

2.2.2 Changes suggested during these meetings have influenced the assessment locations used and the monitoring undertaken and reported in this document.

2.2.3 Representatives of SMBC have also attended baseline sound measurements in this area and witnessed the measurement procedures used.

2.2.4 Local engagement through community forum meetings has also provided the opportunity for local groups to suggest appropriate baseline sound monitoring locations. Any suggestions received from these groups have been considered and influenced the monitoring undertaken and reported in this document.

### 2.3 Existing baseline sound monitoring locations

2.3.1 Maps showing the baseline sound monitoring locations and assessment locations within this area are included in map series SV-03 and SV-04 (Volume 5, Map Book Sound, noise and vibration).

2.3.2 At one location within this CFA (the Toby Carvery (Malt Shovel) public house) (see Maps SV-02-053, H5 and SV-03-053, H5, Volume 5, Map Book Sound, noise and vibration), land access and/or secure monitoring locations has not been available to allow for monitoring



of baseline sound levels. At this location, baseline levels have been based on values obtained from the Birmingham Noise Map<sup>1</sup>.

---

<sup>1</sup> Birmingham Noise Map, (2005), *Electronic data provided by and used with permission of Birmingham City Council.*

## 3 Environmental baseline

### 3.1 Existing baseline data collection methodology

- 3.1.1 The overall approach to baseline data collection for sound noise and vibration is described in Volume 5: Appendix SV-001-000.
- 3.1.2 Over the Bimringham Interchange and Chelmsley Wood area, a large number of baseline sound measurements have been undertaken. These have been classified as follows:
- long-term measurements – unattended measurements of several days duration ;
  - medium-term measurements – attended measurements of several hours duration (generally repeated at different times of day); and
  - short-term measurements – attended measurements typically of 30 minutes duration (generally repeated at different times of day).
- 3.1.3 A total of 45 baseline sound monitoring locations have been used within this area, with further measurements from just outside of the area also being used to provide information on baseline sound levels.
- 3.1.4 At the northern end of this area the Chelmsley Wood residential area has been divided into two sections: the eastern part of Chelmsley Wood, lying between the A452 Chester Road and the M6, and the western part lying to the west of the A452 Chester Road and including Coleshill Heath to the south. For the eastern section three locations were chosen on public access land close to noise sensitive receptors where medium-term sound measurements were conducted during the day and night. A number of related short-term measurements were also undertaken throughout the residential area simultaneously with one of the three original monitoring locations to allow good correlation between the sites to be achieved. The measurements covered a range of locations on public land where sound levels were representative of those at nearby sensitive receptors and were visited at several times of the day and night. A single long-term measurement was also undertaken in this area, located in a residential garden towards the northern end of this area. The typical 24-hour time history from this long-term measurement has been used to adjust measurements from the medium and short-term measurements and calculate 16-hour and 8-hour daytime and night time existing baseline sound levels.
- 3.1.5 For the western section of Chelmsley Wood baseline measurements were based on a long-term, seven day measurement location in the garden of a property close to the A452 Chester Road. A large number of satellite short-term measurements were undertaken at locations throughout the residential area simultaneously with the longer-term measurement to allow good correlation between the site measurements to be achieved.
- 3.1.6 Birmingham Business Park lies mainly to the south-west of the A452 Chester Road and west of the M42. A smaller business area (Quartz Point Business Park) is situated to the east of the A452 Chester Road and M42 and west of the A446 Stonebridge Road. Daytime sound measurements were carried out at a location on the eastern edge of the main part of the business park close to the A452 Chester Road. Three related short-term measurements were undertaken, two at locations within the main part of the Business

Park and a third at a unit in the Quartz Point Business Park. These short-term measurements were carried out simultaneously with the monitoring close to the A452 Chester Road to allow good correlation between the sites to be achieved.

- 3.1.7 A single long-term sound measurement was also undertaken on land to the north of the Birmingham Business Park, close to the buildings at Heath Farm.
- 3.1.8 The NEC covers a large area to the west of the M42. The area includes a number of hotels. Attended short-term measurements have been made at four locations within the NEC. The locations close to the hotels were visited during both daytime and night-time whilst those at the NEC itself were visited during daytime only.
- 3.1.9 To the east of the M42 and in the vicinity of the divergence of the A452 Chester Road and A446 Stonebridge Road there are a few isolated farms and residences. A total of three long-term measurements were undertaken over this area, the most easterly of these being located to the east of the A452 Chester Road.
- 3.1.10 There are a number of properties situated on Middle Bickenhill Lane to the north of the A45 Coventry Road and the associated slip roads to the M42 and link roads to the NEC. Long-term measurements were carried out, totalling ten days, in the garden of a residential property situated on the lane. A total of eight short-term satellite locations were also used, two of them representative of other receptors in the lane and the others of receptors on the other (south) side of the A45 Coventry Road. Short-term satellite measurements were carried out simultaneously with the long-term measurements to allow good correlation.

## 3.2 Existing baseline sound levels

- 3.2.1 From the measurements described in Section 3.1, baseline sound levels have been ascertained for each assessment location within this area. These levels are presented in terms of the following key sound indicators:
  - Baseline levels used for the operational sound assessment
    - $L_{pAeq,16hr\text{ weekday}}$  daytime (07:00-23:00) sound pressure level;
    - $L_{pAeq,8hr\text{ weekday}}$  night-time (23:00-07:00) sound pressure level;
    - arithmetic average of  $L_{pAFmax,5min}$  night-time sound pressure level; and
    - highest  $L_{pAFmax,5min}$  night-time sound pressure level.
  - Baseline levels used for the construction sound assessment
    - Daytime  $L_{pAeq}$  sound pressure level (Monday to Friday 07:00-19:00; Saturday 07:00-13:00);
    - Evening / weekend  $L_{pAeq}$  sound pressure level (Monday to Friday 19:00-23:00; Saturday 13:00-23:00; Sunday 07:00-23:00);
    - Night-time  $L_{pAeq}$  sound pressure level (Monday to Sunday 23:00-07:00);
- 3.2.2 These values are presented in Table 1. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been

derived. This coding is summarised in Table 2 and explained in detail in Volume 5: Appendix SV-001-000.

## Appendix SV-002-024

Table 1: Existing baseline sound levels

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
98009	NEC, Birmingham	WM3703 and WM3701	55.6	50.9	53.7	54.7	55.7	53.7	50.8	3,A,ii,b
99133	NEC, Birmingham	WM3704	52.9	51.5	67.4	71.7	53.0	51.1	51.5	3,A,i,b
99690	NEC, Birmingham	WM3703 and WM3704	55.6	51.5	67.4	71.7	55.7	53.7	51.5	3,A,i,b
100515	Coventry Road, Bickenhill, Solihull	WM1904	59.2	55.2	58.0	61.2	60.6	58.7	55.7	2,A,ii,b
100628	Bickenhill Parkway, Birmingham	WM3701	55.4	50.9	53.7	54.7	55.5	53.5	50.8	3,A,i,b
100835	Birmingham Business Park, Birmingham	WM2204 and WM9803	63.1	49.0	55.1	74.1	63.9	62.1	49.7	Day 3,A,ii,b; Night 1,A,ii,a
101140	Drake Croft, Chelmsley Wood, Birmingham	WM9802	60.3	57.6	65.0	81.6	60.8	60.2	57.6	1,A,ii,a
101235	Birmingham Business Park, Birmingham	WM2204 and WM9803	63.1	49.0	55.1	74.1	63.9	62.1	49.7	Day 3,A,ii,b; Night 1,A,ii,a
101595	Henbury Drive, Chelmsley Wood, Birmingham	WM0210	56.8	49.8	66.0	77.9	57.4	56.7	49.8	3,A,i,b
101701	Hawksworth Crescent, Chelmsley Wood, Birmingham	WM0210	56.8	49.8	66.0	77.9	57.4	56.7	49.8	3,A,i,b
101954	Birmingham Business Park, Birmingham	WM2201 and	62.4	49.0	55.1	74.1	63.1	61.4	49.7	Day 3,A,ii,b;

<sup>2</sup> Table 2 provides a data source coding key.

## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
		WM9803								Night 1,A,ii,a
102534	Dunster Road, Birmingham	WM2307	61.4	55.0	71.6	72.5	65.3	58.5	55.1	2,A,ii,b
112149	Whitebeam Road, Birmingham	WM2305	53.4	45.5	59.8	71.3	57.3	50.5	45.6	2,A,ii,b
112266	Coleshill Heath Road, Birmingham	WM2304	62.0	51.9	70.8	73.4	65.9	59.0	52.0	2,A,ii,b
112491	Coleshill Heath Road, Birmingham	WM9803	50.1	49.0	55.1	74.1	50.8	49.0	49.7	1,A,ii,a
112652	Coleshill Heath Road, Birmingham	WM2304	62.0	51.9	70.8	73.4	65.9	59.0	52.0	2,A,ii,b
114604	Woodlands Way, Birmingham	WMo208 and WMo212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,i,b
114719	Foxland Close, Birmingham	WMo208 and WMo212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
114723	Lyecroft Avenue, Birmingham	WMo208 and WMo212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
114727	Yorkminster Drive, Birmingham	WMo201 and WMo211	65.1	60.0	73.8	81.6	65.7	65.0	59.9	3,A,ii,b
114737	Lyecroft Avenue, Birmingham	WMo208 and WMo212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,i,b
114952	Clover Avenue, Birmingham	WMo208 and WMo212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b

## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
115205	Friars Walk, Birmingham	WM0208 and WM0212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
115343	Friars Walk, Birmingham	WM0208 and WM0212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
115349	Lyecroft Avenue, Birmingham	WM0206 and WM0212	55.8	47.2	54.8	63.8	56.4	55.7	47.2	3,A,ii,b
115364	Clover Avenue, Birmingham	WM0203	56.6	48.2	56.3	58.2	57.2	56.5	48.2	3,A,ii,b
115413	Bluebell Drive, Birmingham	WM0203	56.6	48.2	56.3	58.2	57.2	56.5	48.2	3,A,i,b
115486	Dunster Road, Birmingham	WM2307	61.4	55.0	71.6	72.5	65.3	58.5	55.1	2,A,ii,b
115567	Lumley Grove, Birmingham	WM2313 and WM2314	51.5	37.4	47.9	57.5	55.4	48.6	37.4	2,A,ii,b
115571	Craig Croft, Birmingham	WM2313 and WM2314	51.5	37.4	47.9	57.5	55.4	48.6	37.4	2,A,ii,b
115743	Mulliners Close, Birmingham	WM2307	61.4	55.0	71.6	72.5	65.3	58.5	55.1	2,A,ii,b
115819	Croft Industrial Estate, Dunster Road, Birmingham	WM2307	61.4	55.0	71.6	72.5	65.3	58.5	55.1	2,A,ii,b
116024	Marlene Croft, Birmingham	WM2302	64.6	50.7	70.5	75.2	68.5	61.7	50.8	2,A,ii,b
116612	Chelmsley Road, Birmingham	WM2310	59.6	43.9	61.2	63.2	63.5	56.6	43.9	2,A,ii,b
116976	Wardour Drive, Birmingham	WM2311	53.8	39.9	53.4	72.9	57.7	50.9	40.0	2,A,ii,b
117340	Wardour Drive, Birmingham	WM2311	53.8	39.9	53.4	72.9	57.7	50.9	40.0	2,A,i,b
117503	Carisbrooke Avenue, Birmingham	WM2312 and WM2314	48.7	37.4	47.9	57.5	52.6	45.7	37.4	2,A,i,b

## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
117660	Chelmsley Road, Birmingham	WM2313 and WM2314	51.5	37.4	47.9	57.5	55.4	48.6	37.4	2,A,ii,b
117759	Dunster Road, Birmingham	WM2303	58.9	48.2	60.6	66.7	62.8	56.0	48.2	2,A,ii,b
117787	Fillingham Close, Birmingham	WM2301	55.2	51.0	59.5	80.4	59.1	52.2	51.1	1,A,ii,a
117835	Dunster Road, Birmingham	WM2306	65.8	55.0	71.6	72.5	69.7	62.9	55.1	2,A,ii,b
117857	Fillingham Close, Birmingham	WM2306	65.8	55.0	71.6	72.5	69.7	62.9	55.1	2,A,ii,b
118017	Dunster Road, Birmingham	WM2303	58.9	48.2	60.6	66.7	62.8	56.0	48.2	2,A,ii,b
118170	Fillingham Close, Birmingham	WM2301	55.2	51.0	59.5	80.4	59.1	52.2	51.1	1,A,ii,a
118204	Coleshill Heath Road, Birmingham	WM2306	65.8	55.0	71.6	72.5	69.7	62.9	55.1	2,A,ii,b
118274	Marlene Croft, Birmingham	WM2302	64.6	50.7	70.5	75.2	68.5	61.7	50.8	2,A,ii,b
118460	Fillingham Close, Birmingham	WM2305	53.4	45.5	59.8	71.3	57.3	50.5	45.6	2,A,ii,b
118502	Coleshill Heath Road, Birmingham	WM2304	62.0	51.9	70.8	73.4	65.9	59.0	52.0	2,A,ii,b
118734	Chelmsley Road, Birmingham	WM2305	53.4	45.5	59.8	71.3	57.3	50.5	45.6	2,A,ii,b
118824	Coleshill Heath Road, Birmingham	WM2304	62.0	51.9	70.8	73.4	65.9	59.0	52.0	2,A,ii,b
119054	Coleshill Heath Road, Birmingham	WM2304	62.0	51.9	70.8	73.4	65.9	59.0	52.0	2,A,i,b
119757	Marlene Croft, Birmingham	WM2312 and WM2314	48.7	37.4	47.9	57.5	52.6	45.7	37.4	2,A,i,b



## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
119785	Marlene Croft, Birmingham	WM2302	64.6	50.7	70.5	75.2	68.5	61.7	50.8	2,A,i,b
120095	Nevada Way, Birmingham	WM2312 and WM2314	48.7	37.4	47.9	57.5	52.6	45.7	37.4	2,A,ii,b
121398	Partridge Close, Birmingham	WM0210	56.8	49.8	66.0	77.9	57.4	56.7	49.8	3,A,ii,b
121445	Ryeclose Croft, Birmingham	WM0210	56.8	49.8	66.0	77.9	57.4	56.7	49.8	3,A,ii,b
121494	Ryeclose Croft, Birmingham	WM0210	56.8	49.8	66.0	77.9	57.4	56.7	49.8	3,A,ii,b
121657	Wheaten Close, Birmingham	WM9802	60.3	57.6	65.0	81.6	60.8	60.2	57.6	1,A,ii,a
121670	Brook Farm Walk, Birmingham	WM0208 and WM0212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,i,b
121806	Waterson Croft, Birmingham	WM0208 and WM0212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
121982	Woodlands Way, Birmingham	WM0208 and WM0212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
122203	Travellers Way, Birmingham	WM0208 and WM0212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
122274	Cornfield Croft, Birmingham	WM0208 and WM0212	53.3	47.2	54.8	63.8	53.9	53.2	47.2	3,A,ii,b
122335	Cornfield Croft, Birmingham	WM0202 and WM0207	66.2	61.4	76.2	83.9	66.7	66.0	61.4	3,A,ii,b
122378	Cornfield Croft, Birmingham	WM0202 and WM0207	66.2	61.4	76.2	83.9	62.0	62.0	55.0	3,A,i,b
122410	Yorkminster Drive, Birmingham	WM0202 and	66.2	60.0	73.8	81.6	66.7	66.0	59.9	3,A,ii,b

## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
		WM0211								
122568	Yorkminster Drive, Birmingham	WM0202 and WM0207	66.2	61.4	76.2	83.9	66.7	66.0	61.4	3,A,ii,b
122709	Griffin Business Park, Walmer Way, Birmingham	WM2308 and WM2309	67.0	51.7	64.4	66.2	70.9	64.0	51.7	2,A,ii,b
122968	Roach Close, Birmingham	WM2311	53.8	39.9	53.4	72.9	57.7	50.9	40.0	2,A,ii,b
123085	Richmond Way, Birmingham	WM2311	53.8	39.9	53.4	72.9	57.7	50.9	40.0	2,A,i,b
123146	Partridge Close, Birmingham	WM0210	56.8	49.8	66.0	77.9	57.4	56.7	49.8	3,A,ii,b
123214	Pike Drive, Birmingham	WM2309	62.9	51.7	64.4	66.2	66.8	59.9	51.7	2,A,ii,b
123622	Birmingham Business Park, Birmingham	WM2201 and WM9803	62.4	49.0	55.1	74.1	63.1	61.4	49.7	Day 3,A,ii,b; Night 1,A,ii,a
123706	Birmingham Business Park, Birmingham	WM2204 and WM9803	63.1	49.0	55.1	74.1	63.9	62.1	49.7	Day 3,A,ii,b; Night 1,A,ii,a
123773	Birmingham Business Park, Birmingham	WM2203 and WM9803	52.7	49.0	55.1	74.1	53.4	51.7	49.7	Day 3,A,ii,b; Night 1,A,ii,a

## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
123856	Birmingham Business Park, Birmingham	WM2201 and WM9803	62.4	49.0	55.1	74.1	63.1	61.4	49.7	Day 3,A,ii,b; Night 1,A,ii,a
123995	Birmingham Business Park, Birmingham	WM2201 and WM3702	62.4	52.4	61.6	65.3	63.1	61.4	52.3	3,A,ii,b
124272	Yorkminster Drive, Birmingham	WM0201	65.1	59.2	75.4	85.9	65.7	65.0	59.2	3,A,ii,b
124293	Yorkminster Drive, Birmingham	WM0201	65.1	59.2	75.4	85.9	65.7	65.0	59.2	3,A,ii,b
124314	Chiswick Walk, Birmingham	WM0206 and WM0212	55.8	47.2	54.8	63.8	56.4	55.7	47.2	3,A,ii,b
124331	Chiswick Walk, Birmingham	WM0206 and WM0212	55.8	47.2	54.8	63.8	56.4	55.7	47.2	3,A,ii,b
124367	Chiswick Walk, Birmingham	WM0205	56.3	53.1	61.2	69.6	56.9	56.2	53.1	3,A,ii,b
124404	Yorkminster Drive, Birmingham	WM0201	65.1	59.2	75.4	85.9	65.7	65.0	59.2	3,A,ii,b
124466	Chiswick Walk, Birmingham	WM0206 and WM0212	55.8	47.2	54.8	63.8	56.4	55.7	47.2	3,A,ii,b
124483	Bluebell Drive, Birmingham	WM0203	56.6	48.2	56.3	58.2	57.2	56.5	48.2	3,A,ii,b
124506	Bluebell Drive, Birmingham	WM0203	56.6	48.2	56.3	58.2	57.2	56.5	48.2	3,A,ii,b
124567	Birmingham Business Park, Birmingham	WM2201 and WM9803	62.4	49.0	55.1	74.1	63.1	61.4	49.7	Day 3,A,ii,b; Night 1,A,ii,a
129971	Bickenhill Parkway, Birmingham	WM3702	60.8	52.4	61.6	65.3	60.8	58.9	52.3	3,A,ii,b

## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
129994	Birmingham Business Park, Birmingham	WM2201 and WM9803	62.4	49.0	55.1	74.1	63.1	61.4	49.7	Day 3,A,ii,b; Night 1,A,ii,a
176071	Chester Road, Coleshill, Birmingham	WM9805	60.6	55.7	63.8	82.6	61.3	59.6	55.9	1,A,ii,a
181301	Middle Bickenhill Lane, Hampton-In-Arden, Solihull	WM1905	56.7	53.2	62.2	80.1	58.1	56.1	53.7	2,A,ii,b
181323	Middle Bickenhill Lane, Hampton-In-Arden, Solihull	WM1906	64.9	61.8	66.6	74.2	66.3	64.3	62.3	2,A,ii,b
181420	Middle Bickenhill Lane, Hampton-In-Arden, Solihull	WM1901	59.3	55.1	60.5	79.2	60.7	58.7	55.6	1,A,i,a
181503	Chester Road, Coleshill, Birmingham	WM9805	60.6	55.7	63.8	82.6	61.3	59.6	55.9	1,A,ii,a
181557	Middle Bickenhill Lane, Hampton-In-Arden, Solihull	WM9801	45.8	39.9	46.3	64.7	46.5	43.6	40.0	1,A,ii,a
182204	Coventry Road, Meriden, Coventry	Birmingham Noise Map and WM1906	73.0	65.0	66.6	74.2	73.0	73.0	65.0	6,A,i,c
182291	Packington Lane, Meriden, Coventry	WM2101	55.7	52.5	57.1	61.2	56.4	53.5	52.5	3,A,ii,b
183646	Quartz Point, Stonebridge Road, Coleshill, Birmingham	WM2202 and WM9805	65.5	55.7	63.8	82.6	66.2	64.5	55.9	Day 3,A,ii,b; Night

## Appendix SV-002-024

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding <sup>2</sup>
			For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average of night-time L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime L <sub>pAeq</sub>	Evening / Weekend L <sub>pAeq</sub>	Night-time L <sub>pAeq</sub>	
										1,A,ii,a
700557	Mill Farm Barns	WM9804	60.0	55.2	62.4	77.1	61.8	57.0	55.9	1,A,i,a
700558	Common Farm, Chester Road, Coleshill, Birmingham	WM9805	60.6	55.7	63.8	82.6	61.3	59.6	55.9	1,A,ii,a
700559	Middle Bickenhill Lane, Hampton-In-Arden, Solihull	WM9801	45.8	39.9	46.3	64.7	46.5	43.6	40.0	1,A,i,a
700560	NEC, Birmingham	WM3704	52.9	51.5	67.4	71.7	53.0	51.1	51.5	3,A,ii,b
700561	NEC, Birmingham	WM3704	52.9	51.5	67.4	71.7	53.0	51.1	51.5	3,A,ii,b
700562	NEC, Birmingham	WM3704	52.9	51.5	67.4	71.7	53.0	51.1	51.5	3,A,ii,b
700563	Craig Croft, Birmingham	WM2313 and WM2314	51.5	37.4	47.9	57.5	55.4	48.6	37.4	2,A,i,b
700564	Chelmsley Wood, Birmingham	WM2309	62.9	51.7	64.4	66.2	66.8	59.9	51.7	2,A,ii,b
701081	Craig Croft, Birmingham	WM2313 and WM2314	51.5	37.4	47.9	57.5	55.4	48.6	37.4	2,A,ii,b
722000	Old Station Road, Hampton-In-Arden, Solihull	WM1903	58.8	55.4	59.5	65.1	60.2	58.2	56.0	2,A,ii,c
722001	Portland House, Bickenhill Lane	WM3701	55.4	50.9	53.7	54.7	55.5	53.5	50.8	3,A,ii,c
722002	Diamond House, Birmingham Airport	WM3701	55.4	50.9	53.7	54.7	55.5	53.5	50.8	3,A,ii,c
722003	Novotel, Birmingham Airport	WM3701	55.4	50.9	53.7	54.7	55.5	53.5	50.8	3,A,ii,c

## Appendix SV-002-024

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location
2	Short-term (linked to simultaneous long-term)
3	Short-term (using profile from non-simultaneous long-term)
4	Short-term using standard (National Noise Incidence Study <sup>3</sup> or other) 24hr profile
5	Specific validated prediction
6	Predictions from other sources (Defra noise maps <sup>4</sup> , etc.).
7	Generic levels

Code	Corrections applied
A	Data from above source applied directly
B	Correction applied for screening
C	Correction applied for distance from source
D	Minimum level cut-off applied.

Code	Distance from measurement
i	Data applied from a measurement at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.

Code	Uncertainty
a	Data are considered highly representative of the prevailing sound climate
b	Data are considered representative of the prevailing sound climate, but variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate, (e.g. taken from Defra noise maps, etc.).

<sup>3</sup> Building Research Establishment, (2002), *National Noise Incidence Study 2000/2001*.

<sup>4</sup>Department for the Environment, Food and Rural Affairs (Defra), (2013), *Noise Mapping England*; <http://services.defra.gov.uk/wps/portal/noise/>; Accessed: July 2013.

### 3.3 Future baseline methodology

#### Construction

- 3.3.1 The assessment of noise from construction activities assumes a baseline year of 2017. As a conservative assumption, it has been assumed that no change in baseline sound levels will occur between the existing baseline (2012/13) and the future baseline year of 2017.
- 3.3.2 Due to the duration of the construction work and as the precise timing of the highest sound levels would be different in each location, using baseline sound levels for 2017 as the start of the construction period, provides a reasonable worst case assessment.
- 3.3.3 The assessment of construction traffic is based on future baseline traffic flows for 2021, as a year representative of the middle of the construction period.

#### Operation

- 3.3.4 Changes in existing sound sources between 2012/2013 and 2026 may result in changes to baseline sound levels.
- 3.3.5 For major transportation sources, data for existing and future baseline operations have been reviewed. Where changes may occur between the existing baseline and future baseline (2026) situations, expected changes in baseline sound level have been derived. For example, expected changes in traffic flow, composition and speed have been used to calculate changes in sound emission from roads using the methodology from the Calculation of Road Traffic Noise<sup>5</sup>.
- 3.3.6 The changes to major sound sources which have been identified in this area are summarised in Table 3.

Table 3: 2026 future baseline changes in sound sources

Sound Source affected	Cause of change in levels	Change in sound levels (existing baseline to 2026 future baseline) (dB)	
		Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$
Coventry Road, Middle Bickenhill	Increased traffic flow	+2.5	+2.5

<sup>5</sup> Department of Transport, (1988), *Calculation of Road Traffic Noise*.

## 4 References

Birmingham Noise Map, (2005), *Electronic data provided by and used with permission of Birmingham City Council.*

Building Research Establishment (BRE), (2002), *National Noise Incidence Study 2000/2001.*

Department for the Environment, Food and Rural Affairs (Defra), (2013), *Noise Mapping England*; <http://services.defra.gov.uk/wps/portal/noise/>; Accessed: July 2013.

Department of Transport, (1988), *Calculation of Road Traffic Noise.*